

REMARKS

Reconsideration is respectfully requested. Claims 1-6 are present in the application. Claim 3 is amended herein. Claims 1, 2 and 4-6 are withdrawn as a result of restriction requirement.

The Examiner has requested a new title, and provided a suggested title, which applicants adopt with thanks for the suggested wording.

Claim 3 is objected to because of informalities. Amendments are made to claim 3 herein to address the points raised by the Examiner, with thanks to the Examiner for noting the suggested wording changes to resolve the objections.

Claim 3 is rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Swift (US 4953366). Applicants respectfully traverse.

Claim 3 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Ceperly (U.S. 4114380) in view of Swift (US 4953366). Applicants respectfully traverse.

Claim 3 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Swift (US 4953366) in view of Ceperly (U.S. 4114380). Applicants respectfully traverse.

A difference between the disclosures of the cited documents and applicants' claim is that applicants' claims recite a heat-driven pressure-wave generator for generating a traveling wave

by causing self-excited vibration using two symmetrically-connected phase resonators. This may be observed with reference, for example, to FIG. 3 of the present application, or FIG. 2. Such configuration is not taught or suggested by the documents relied upon, whether considered alone, or when combined.

Claim 3 is amended to clarify this difference, that there are two resonators connected symmetrically to an inlet port of said heat-driven tube. Support for this amendment is found in the specification and drawings as filed, for example, in FIGS. 2 and 3, and in the text page 9, line 24, for example.

New claim 7 depends on claim 3 and adds that the symmetry is bilateral symmetry. Support for this language is found at the specification page 10, lines 30-31, for example.

New claim 8 depends on claim 3 and adds that each said resonator has a piston and a cylinder. Support for this language is at page 8, line 24 and following, for example.

Applicants respectfully submit that the and documents, whether considered alone or combined, do not teach or suggest the claims and that applicants claims recite something entirely different from the cited documents.

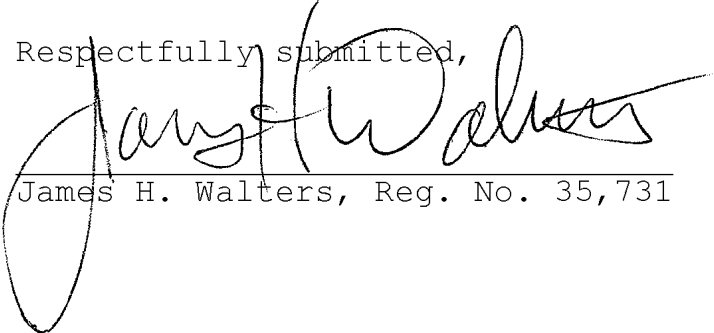
Applicants' claimed device provides at least the following three advantageous points. By adopting symmetrical solid pistons or displacers, (1) the pulse tube refrigerator becomes light in weight and compact in size, (2) the vibration of the

refrigerator can be reduced, and (3) the efficiency can be raised. Therefore, the refrigerator of applicants' claims has practical application over the prior art, as these three points cannot be achieved by the conventional method.

In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant's attorney at 503-224-0115 if there are any questions.

It is believed that no further fees are due with this filing or that the required fees are being submitted herewith. However, if additional fees are required to keep the application pending, please charge deposit account 503036. If fee refund is owed, please refund to deposit account 503036.

Respectfully submitted,

  
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